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species are described, and the whole revision gives evidence of a very painstaking work. 4. Systematic and alphabetic index of new species of North American Phanerogams and Pteridophytes, published in 1891, compiled by Josephine A. Clark. This index supplies a very great desideratum, and is properly supplied to botanists by the government. There is also in preparation an index covering preceding years back to 1885, and the promise is given hereafter of an annual index. It is startling to find that a list of the new species of North American vascular plants published in a single year occupies nearly 24 pages, but the number is very much reduced when it is noticed that all changes in nomenclature which have involved new combinations are included. The Division of Botany has put students of systematic Botany under great obligation in preparing this index and in promising its continuance.

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### NOTES AND NEWS.

REV. F. D. KELSEY, of Helena, Montana, has accepted the chair of Botany at Oberlin College. He is to spend the winter and spring at Harvard University.

DR. R. CHODAT, Professor of Botany at the University of Geneva, Switzerland, desires copies of papers written by American botanists for the library of the university.

THE FUNGUS DISEASES OF IOWA CEREALS are briefly treated by Prof. L. H. Pammel, especially the rusts and smuts, in a recent Bulletin (No. 18) of the Iowa Experiment Station.

PRESENTATION EXERCISES were held October 15th, by the botanical seminary of the University of Nebraska, when a bust of Darwin was placed in the Herbarium of the University.

MR. J. B. FARMER, for some time past demonstrator of botany at Oxford University, has been appointed assistant professor of botany at the Royal College of Science in South Kensington, as successor to Dr. D. H. Scott, who has gone to the Jodell Laboratory at Kew.

IN A handsomely printed pamphlet of 78 pages, Professor J. E. Humphrey gives a very interesting account of "Amherst Trees." The work is designed primarily for the citizens of Amherst, but it contains much valuable information for the general reader, and notes that will be of use to the professional botanist.

THE CAUSES of electrical disturbances in the plant have been investigated by Otto Haake (*Flora*, 1892, pp. 455-487), who finds that respiration and carbon-dioxide assimilation are chiefly concerned, while the movement of sap, as Kunkel believed (*Arb. d. bot. Inst. zu Würzburg*, ii, p. 1), has but little to do with it.

IN THE *Scientific American* (Sept. 3rd) is the description, by W. T. Davis, of a new hybrid oak found upon Staten Island. It is a hybrid of *Q. nigra* and *Q. ilicifolia*, and is named *Q. Brittoni*. It is further commented upon, and tracings of leaves given in the Proceedings of the Nat. Sci. Ass., of Staten Island, for September 10th.

THE MARRIAGE of Mr. O. F. Cook and Miss Alice Carter occurred on October 11th. Mr. Cook is well known to all students of hepatics through his distribution of *Hepaticæ Americanæ* in conjunction with Dr. Underwood. Miss Carter is also a botanist who has recently made contributions to botanical literature in the field of pollination and color of flowers.

A DISEASE OF POTATOES, in which the stems turn brown at the surface of the ground, and the whole plant soon dies, has been observed in France, and found by MM. Prillieux and Delacroix (*Compt. rend.*, cxi, p. 208) to be due to a microbe, which they name *Bacillus caulivorus*. The disease can be transferred to geraniums, beans and lupines, but not to other plants.

M. A. FRANCHET, in *Journal de Botanique* (Sept. 16), describes the species of *Lilium* from China and Thibet represented in the herbarium of the Muséum de Paris. The study is especially difficult on account of the long interference of man with these showy flowers, and it becomes well nigh impossible to determine original forms. However, 24 species are described, 10 of which are new.

ACTA PETROPOLITANI (Tom. XI. fasc. ii), 1892, contains the usual amount of interesting material concerning the Asiatic flora, a flora of special interest to North American botanists. The Apetalæ of the Radden collection are presented by F. Herder; seventh to tenth decade of new Compositæ, by C. Winkler; and descriptions of many other new plants by Batalin, Korzhinsky, and E. Regel.

A REVIEW OF THE SUMMER SCHOOL movement in the University of Minnesota is given in the last *Quarterly Bulletin* of that institution. Four sessions have been held; in 1881, 1882, 1883 and 1892, with an attendance of 45, 75, 104 and 741 respectively. The botany was given by Prof. C. E. Bessey, in 1881, Prof. J. C. Arthur in 1882, and Prof. Conway McMillan in 1892. Botany was omitted in 1883.

BOTANY PARTAKES of the renaissance that characterizes the present administration at Brown University. The Freshman class numbers 140; the Woman's Adjunct, 40. Professor Bailey now has in his department 92 students in all. The president proclaims himself an "apostle of botany." In his annual report he declares the present accommodations of the department "ludicrously inadequate."

During the vacation an attempt has been made to improve, by painting the halls, the introduction of water, new cases and tables, the general outfit of the little laboratory. The room, however, is so small, that the professor is compelled to take the larger class sections into other buildings. There is a good outfit of microscopes and re-agents. Mr. W. T. V. Osterhout, of the Senior class, has spent the summer in study at Wood's Holl, and acts as demonstrator in the advanced classes. A new building to accommodate the lecture rooms, laboratory and herbarium is a crying necessity.

THE MORPHOLOGY OF THE FLOWER of *Anthoxanthum* has been studied by Mr. Theo. Holm in malformed flowers found in the Smithsonian park, at Washington, D. C. The subject forms an illustrated article in the Proceedings of the National Museum (xv, p. 399), in which the conclusion is reached "that the two awned glumes inside the proper empty ones really belong to two neutral flowers, and that the perfect flower has both a flowering glume and a palet, thereby not being terminal but lateral."

THE *Journal of Botany* for October contains the description of a new *Ranunculus* from W. Scotland, allied apparently to *R. Flammula*. Mr. Baker's Synopsis of Malveæ continues with species of *Sida*, this number containing 6 new species. The Rev. W. Moyle Rogers also continues his "Essay at a Key to British Rubi", which if successful will be a great relief to British botanists. Mr. George Masee also pays his respects in a sprightly fashion to Mr. G. Romanes, in a review of his "Darwin and after Darwin."

THE VOLUME OF PROCEEDINGS of the American Association for the Advancement of Science, for the year 1891, has recently been distributed. Besides the presidential and vice-presidential addresses of Prof. Geo. L. Goodale and Prof. John M. Coulter, which are printed in full, there are eighteen botanical papers, all but two in the form of very brief abstracts, often consisting of only a few lines. The papers by Professors Bessey and Beal, on transpiration and movement of water in plants, cover four pages each.

THE SECOND REPORT upon electro-horticulture (Cornell Univ. Bull., No. 42), by Prof. L. H. Bailey, firmly establishes the commercial value of the electric light for certain winter crops, especially for lettuce. Certain kinds of plants, which are injured by the direct rays of the light, are not injured, and may even be benefited, when the light passes through a clear glass globe, or through a glass roof. Auxanometric records appear to show that the light accelerates growth, but does not change its normal periodicity.

IN THE *Annals of Botany* (July, 1892) J. Bretland Farmer calls attention to a remarkable abnormality in the development of the ovule of *Pinus sylvestris*. He has discovered two distinct endosperms or prothallia in the ovule. The prothallia are separated by a well-marked wall which runs obliquely between them, and is continuous with the wall of the cavity containing them. Both prothallia have perfectly developed archegonia. This clearly indicates that two macrospores have been developed instead of one. Mr. Farmer suggests that this might have arisen by each of the two cells into which the embryo-sac-mother-cell divides, developing into a prothallium, where normally only the lower so develops. Or, as in certain other Coniferæ (as *Thuja*) in which several mother cells are differentiated, but only one macrospore normally reaches maturity, two independent mother cells may possibly have developed into prothallia.